# Farmers' Champion

Successor to Indiahoma Champion

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AT THE HELM.


A Progressive President is Now Guiding Our Ship of State

## Progressive Farming

This Department is devoted to those methods that are so wonderfully revolutionizing Agriculture

### DEFINITION OF DRY FARMING

Accumulation and Conservation of Moisture in Soil Is Aim and Purpose of Arid Farmer.

(By E. R. PARSONS.)

"Dry farming has often been defined as the conservation of moisture. A much like definition and a more accurate one would be the accumulation and conservation of moisture. We must acquire our moisture before we can conserve it, and unless we give due weight to each of these processes we cannot live up to the highest standard of dry farming.

"It is self-evident that in order to make use of the best form of mulch, local conditions must be given serious consideration. Some of the problems are as follows: (1) In a country where the precipitation is more or less evenly divided throughout the year, will the moisture be able to penetrate the mulch sufficiently to get down into the sub-soil? My answer based on experience is that the moisture at the end of the season is largely found in the soil under a mulch from two and a half to three inches in depth. (2) Will the mulch crust easily after a rainfall or the reverse? A furrowed surface will never crust or bake like a smooth one after a storm, the bottom of the furrow being much better than the top. (3) When high winds prevail will the mulch blow? The smoothest land blows the worst everywhere. If we could take the edge off the wind it amounts to the same thing as taking the edge off a razor—it cannot cut. (4) Will a crust form under the mulch in very dry weather, and if so, how can it be prevented? Every dry year a wail goes up from the shallow plowers and surface farmers as to combating this problem. There is only one remedy, deep-plowing, but not a preventive as nothing on earth can prevent this crust forming, provided the drouth last long enough. (5) In a country like California, which has a rainy and a wet season, what is the best type of mulch for conservation purposes after the rain has all fallen and a farmer faces the regular five months' drouth? The deeper and finer the mulch the better it conserves moisture when precipitation is no longer a factor. In such a country we find the best farmers using a fine mulch, even a dust mulch from six to eight inches deep. The evaporation from the sub-soil with a mulch of this kind is almost nil. (6) Is the top-soil or seed bed of a cultivated field a mulch to the sub-soil or does the sub-soil moisture move up freely with it? This is more a question of dry farm physics. In actual practice, agricultural books to the contrary notwithstanding, I have never been able in my thirty-five years of dry farm work to discover any capillary or film moisture moving up from the sub-soil into the seed bed by capillarity, and therefore I argue that the top soil acts as and should be regarded as mulch for the sub-soil.

"As a general rule on the dry farm all fields will yield more when plowed and fallowed ahead of planting time if only for a few weeks or a month. A farmer who does this systematically will find that he can altogether dispense with a packer for the soil after being settled by a good rain or two is in much better physical condition for the crop than when artificially taxed."

### BENEFITS OF DEEP PLOWING

Where Work Is Done in Shallow Method Mulch Becomes Dry, and Then Inevitable Crust Forms.

Supposing that a man plow six or seven inches, his mulch, which should be about three inches, becomes dry, then the inevitable crust forms, one or two inches thick; how much will he have left for his crop? About one inch. Is it any wonder the crop dries out? On the other hand, if he plows ten to twelve inches deep, he will have six inches of soil left for his crop before coming to the hardpan. After six or eight weeks' drought this crop will have as much dirt to grow on as the shallow plower gives his crops at the start.

Packing or rolling increases the conductivity, but reduces the moisture holding capacity of land for water, and promotes the formation of a crust in clay soils. Every inch the drought creeps downward into our soil the longer it takes to dry out the succeeding inch; the top inch may dry out in a few days, but it takes months to dry out the fifth inch, therefore, with even one-inch plowing, we have a very good chance to weather any drought that comes.

### DRY FARM ESSENTIALS

First Catch and Store Rain Water Which Falls on Land.

Can Be Accomplished by Making of Subsoil a Reservoir to Hold Rains Which Otherwise in Large Measure Would Run Off.

(By R. R. CLARIDGE, Longview, Texas.)

As the term is usually understood, "dry-farming" is crop-growing with limited rainfall. But the methods which bring success, in other words, "dry-farming methods," apply in greater or lesser degree to farming under all conditions.

In a nutshell, the essence of dry-farming is first, to catch and store in the soil, the rain water which falls upon the land, and then to hold it where it will do the most good to crops. The first is accomplished by making of the subsoil a reservoir to hold the rains which otherwise in large measure would run off the land. This is done by deep plowing and subsoiling.

The second essential of dry-farming is to hold in the ground against a time when it shall be needed, the moisture thus stored in the soil and subsoil. This is done by surface stirring, before and after planting.

As moisture from the soil escapes into the air by way of tubes or capillaries connecting with the surface, anything which breaks these up at the surface has the effect of preventing the escape into the air of soil moisture. For instance, when we boys, young or old, in a dry time, roll over the old logs to get worms for fish bait, we find the worms on the surface of the ground because there is moisture there. The moisture is there, because it cannot get out, the log operating as an obstruction to its passage by closing the soil tubes at the surface. The soil mulch, made by surface stirring of the soil, serves the same purpose as the old log.

Experimenting to some small extent with the soil mulch, I have been greatly surprised at how long moisture may be held in the ground by the establishment of such a mulch upon the surface. Last season, for instance, I held an Irish potato crop in the ground a month for better prices. There was not a drop of rain for two weeks before they were ready to dig, the 16th of May. And yet there was moisture enough in the ground to bring up to a good stand cotton planted immediately after digging the spuds a month later. Some of my neighbors wondered why I should cultivate potatoes so long after they had matured. Fearing rain would not come in time, I was merely holding the moisture to bring up the cotton which, by the way, made more than half a bale per acre.

The same season I was taking some strawberry plants, late planted, through the summer. After the last rain in the spring I made, with a hoe and with my own hands, a better soil mulch than one could afford to devote to field crops. For two months they kept green and fresh. Not wishing them to bloom so late, I even pinched off a good many blooms. But when a heavy midsummer rain came I was away from home, and did not return until seven or eight days after the rain. I was surprised to find my vines about "all in." Seven or eight weeks drought, in other words, did not hurt them, but they were nearly ruined by a hard-baked surface very soon after the rain.

The dry farmer soon learns that, failing his soil mulch after a rain, he is out of business, and that it is important his mulch should be made at the right time. If the surface is permitted to bake before it is stirred, it becomes broken into clods, and I am afraid that moisture goes into the air through clods as fast or faster than through a baked surface.

Among people casually up to the subject of surface stirring to hold in the moisture, I find the idea prevailing that the thinner the soil mulch the better. Well, there is such a thing as a subsurface crust, which, preventing the rise of moisture, is as bad or worse than a top crust. This comes usually where the surface is stirred shallow after a rain, and then let alone through a long dry spell. The first mistake is no doubt from stirring a little too shallow and then waiting too long for another rain.

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